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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/821,585

04/09/2004

Aamod Khandekar

030304

1901

23696 7590 11/30/2009  
QUALCOMM INCORPORATED  
5775 MOREHOUSE DR.  
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EXAMINER

MALEK, LEILA

ART UNIT

PAPER NUMBER

2611

NOTIFICATION DATE

DELIVERY MODE

11/30/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

us-docketing@qualcomm.com  
kascanla@qualcomm.com  
nanm@qualcomm.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/821,585	<b>Applicant(s)</b> KHANDEKAR ET AL.	
	<b>Examiner</b> LEILA MALEK	<b>Art Unit</b> 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 11 August 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3-9,11,12,14-16,20,21,25,26,28 and 31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 20,21,25 and 26 is/are allowed.
- 6) ☒ Claim(s) 1,3-9,11,12,14-16,28 and 31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 April 2009 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>06/11/2009</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Amendment***

1. This office action is in response to the amendments received on 08/11/2009.

### ***Claim Objections***

2. Claim 16 is objected to because of the following informalities: as to claim 16, limitations "means for computing a decoded base stream based on the LLRs for code bits of the base stream" and "means for decoding the LLRs for the code bits of the first data stream to obtain decoded data for the base stream" are duplicate limitations.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1, 3-9, and 11 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. As to claim 1, Applicant in invention's disclosure fails to disclose how limitations such as "estimating interference due to the first data stream based on the decoded data", "the interference due to the first data stream is estimated based on the remodulated symbols", and deriving enhancement LLRs "based on the code bits of the first data stream" can be combined with limitations associated with adjusting the

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enhancement by "setting LLRs for code bits of the data symbols estimated detected to be in error to erasure". Because the first three limitations are directed to the embodiment of the invention shown in Fig. 6, and the limitations regarding deriving enhancement LLRs "based on the code bits of the first data stream" are directed to the embodiment of the invention shown in Fig. 5. Applicant in invention's disclosure fails to disclose how a combination of these embodiments works in a way to enable one skilled in the art to use the same method. In other words according to Fig. 5, the interference is estimated based on the data symbol estimates (hard decision) and not based on the decoded data. Also based on Fig. 5, the interference is not estimated based on the remodulated symbols. Furthermore, the enhancement LLRs have not been derived based on the code bits the first data stream and they have been derived based on the received symbols. Claims 3-9, and 11 depend on claim 1, therefore they are rejected as well.

4. Claims 12 and 14-16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. As to claims 12 and 16, Applicant in invention's disclosure fails to disclose how limitations such as "estimate interference due to the first data stream based on the decoded data", "the interference due to the first data stream is estimated based on the remodulated symbols", and deriving enhancement LLRs based on "LLRs for the code bits of the first data stream" can be combined with limitations associated with adjusting

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the enhancement by “setting LLRs for code bits of the data symbols estimates detected to be in error to erasure”. Because the first three limitations are directed to the embodiment of the invention shown in Fig. 6, and the limitations regarding the deriving enhancement LLRs “based on the code bits of the first data stream” are directed to the embodiment of the invention shown in Fig. 5. Applicant in invention's disclosure fails to disclose how a combination of these embodiments works in a way to enable one skilled in the art to use the same method. In other words according to Fig. 5, the interference is estimated based on the data symbol estimates (hard decision) and not based on the decoded data. Also based on Fig. 5, the interference is not estimated based on the remodulated symbols. Furthermore, the enhancement LLRs have not been derived based on the code bits the first data stream and they have been derived based on the received symbols. Claims 14 and 15 depend on claim 12, therefore they are rejected as well.

5. Claim 28 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. As to claim 28, Applicant does not disclose the combination of limitation “a second computation unit operative to derive LLRs for code bits of a second data stream based on the estimated interference and the LLRs for code bits of the first data stream” with the limitations regarding the “adjustment unit”. In other words, the first limitation belongs to the embodiment of Fig. 6, however the second limitation (limitations regarding the

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adjustment unit) belongs to a different embodiment of the invention as shown in Fig. 5.

Applicant in invention's disclosure fails to disclose how the combination of these embodiments works.

6. Claim 31 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. As to claim 31, Applicant does not disclose the combination of limitation "wherein the interference due to the first data stream is estimated based upon the remodulated symbols" with the limitations regarding the "deriving correction factors". In other words, the first limitation belongs to the embodiment of Fig. 6, however the second limitation (limitations regarding the LLRs adjustment) belongs to a different embodiment of the invention as shown in Fig. 5. Applicant in invention's disclosure fails to disclose how the combination of these embodiments works.

#### ***Allowable Subject Matter***

7. Claims 20, 21, 25, and 26 allowed.

#### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LEILA MALEK whose telephone number is (571)272-8731. The examiner can normally be reached on 9AM-5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on 571-272-3021. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Leila Malek  
Examiner  
Art Unit 2611

/L. M./  
/Leila Malek/  
Examiner, Art Unit 2611

/Mohammad H Ghayour/  
Supervisory Patent Examiner, Art Unit 2611